



# Source Water Assessment Program (SWAP) Report For Massachusetts State Police Academy

## What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

## SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the  
Massachusetts Department of  
Environmental Protection,  
Bureau of Resource Protection,  
Drinking Water Program

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**Table 1: Public Water System (PWS) Information**

<b>PWS NAME</b>	Massachusetts State Police Academy
<b>PWS Address</b>	West Brookfield Road
<b>City/Town</b>	New Braintree, Massachusetts
<b>PWS ID Number</b>	2202001
<b>Local Contact</b>	Fabian Trudeau
<b>Phone Number</b>	(508) 867-1167

<b>Well Name</b>	<b>Source ID#</b>	<b>Zone I (in feet)</b>	<b>IWPA (in feet)</b>	<b>Source Susceptibility</b>
Well	2202001-01G	400	2,800	Moderate
Well	2202001-02G	400	2,800	Moderate

## Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

### Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

### This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

## 1. Description of the Water System

The Academy obtains its water supply from two bedrock wells located off West Road. The access road to the pump station has a locked gate. Each well has a Zone I of 400 feet and an Interim Wellhead Protection Area (IWPA) of 2,800 feet. The Academy also provides water to the New Braintree Grade School (PWS # 2202004), a consecutive system; by an 8 inch service line of approximately one mile in length. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant

### What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

### What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

migration. Please refer to the attached map of the Zone I and IWPA. The wells serving the facility receive corrosion control treatment using potassium hydroxide and disinfection using calcium hypochlorite. For current information on monitoring results and treatment and a copy of the most recent Consumer Confidence Report, please contact the Public Water System contact person listed above in Table 1. Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at [http://www.epa.gov/enviro/html/sdwis/sdwis\\_query.html](http://www.epa.gov/enviro/html/sdwis/sdwis_query.html).

## 2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

### Key issues include:

1. **Activities in Zone Is; and**
2. **Agricultural activities within the IWPA.**

The overall ranking of susceptibility to contamination for the well is Moderate, based on the presence of moderate threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone Is** – The wells meet DEP's restrictions, which only allow water supply related activities in Zone Is. There are no non water supply activities within the Zone I. The public water supplier owns and controls all land encompassed by the Zone I. Access to the wells is gated and locked.

### Recommendation(s):

- ✓ Continue to prohibit public access to the well and pumphouse by locking facilities, gating roads, and posting signs.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism
- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Do not salt the access road to the pumphouse within the Zone I.

2. **Agricultural activities** – A cropland area is located within the IWPA of the water supply. Fertilizer and pesticide are potential sources of contamination, if improperly applied or stored.

**Table 2: Table of Activities within the Water Supply Protection Areas**

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Access road	Both wells	Both wells	Moderate	Limit road salt usage and provide drainage away from wells
Agricultural activities	No	Both wells	Moderate	Fertilizer & pesticide use

\* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - [www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/).

## Glossary

**Zone I:** The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

**IWPA:** A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I I. To determine IWPA radius, refer to the attached map.

**Zone II:** The primary recharge area defined by a hydrogeologic study.

**Aquifer:** An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

**Hydrogeologic Barrier:** An underground layer of impermeable material that resists penetration by water.

**Recharge Area:** The surface area that contributes water to a well.

## Recommendations:

- ✓ Use Best Management Practices when applying fertilizers or pesticides.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

## 3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. State Police Academy should review and adopt the key recommendations above and the following:

### Zone I:

- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- ✓ Consider well relocation if Zone I threats cannot be mitigated
- ✓ Do not use road salt within the Zone I.

### Facilities Management:

- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.

### Planning:

- ✓ Work with local officials in New Britain to include the State Police Academy IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

### Agricultural:

- ✓ Consider obtaining a conservation restriction for any agricultural land within Zone I that cannot be purchased. Another option is to negotiate a "Memorandum of Understanding" (MOU) with the farmer to refrain from using pesticides and fertilizers and eliminate manure storage within Zone I.

- ✓ Encourage farmers in the IWPA to seek assistance from the Natural Resource Conservation Service (NRCS) in addressing manure management issues.

### Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for the Grant program (RFR). Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at

<http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

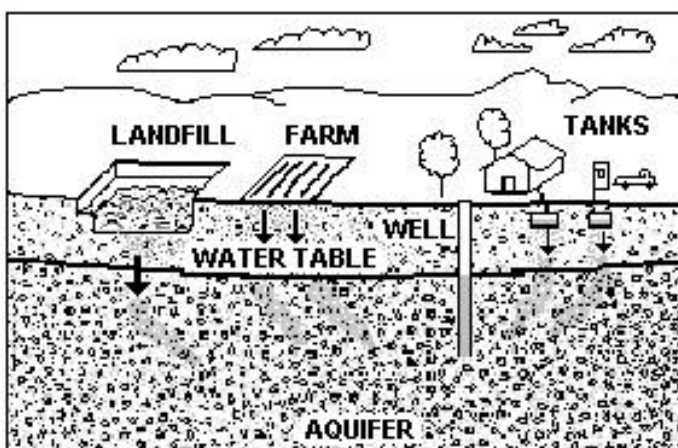


Figure 1: Example of how a well could become contaminated by different land uses and activities.

**For More Information:**

Contact **Josephine Yemoh-Ndi** in DEP's **Worcester Office** at **(508) 792-7650 x 4030** for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

[www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/)

Copies of this assessment have been provided to the public water supplier, town boards, and the local media.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

**4. Attachments**

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Pesticide Use Factsheet
- Wellhead Protection Grant Program Fact Sheet

**Additional Documents:**

To help with source protection efforts, more information is available by request or online at [www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/) including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix